

CLAIMS

What is claimed is:

- 1 A medical robotic system, comprising:  
2 a first medical device;  
3 a first input device that can be moved a first input  
4 distance to move said first medical device;  
5 a second input device that can be moved a second input  
6 distance to move said first medical device; and,  
7 a feedback device that provides an indication of a  
8 difference between the first and second input distances.
- 1 2. The system of claim 1, wherein said feedback device  
2 provides a force feedback.
- 1 3. The system of claim 1, wherein said feedback device  
2 includes a visual feedback.
- 1 4. The system of claim 2, wherein said force feedback  
2 is applied to said first input device.

1       5. The system of claim 4, wherein said force feedback  
2 is applied to said second input device.

*Sub A*  
1       6. The system of claim 1, wherein said first input  
2 device includes a handle and said second input device  
3 includes a handle.

*Sub A*  
1       7. The system of claim 1, further comprising a  
2 communication interface that couples said first and second  
input devices to said first medical device.

*Sub A*  
1       8. The system of claim 7, wherein said first medical  
2 device includes a robotic arm coupled to a medical  
instrument.

1       9. The system of claim 1, wherein said first input  
2 device includes a switch that allows said first input  
3 device to assume sole control of said first medical device.

*Sub A*  
1       10. The system of claim 1, further comprising an  
2 arbitrator that is coupled to said first medical device,  
3 said first input device and said second input device.

*SUS*

1        11. A medical robotic system, comprising:  
2              a first medical device;  
3              first input means that can be moved a first input  
4              distance for moving said first medical device;  
5              second input means that can be moved a second input  
6              distance for moving said first medical device; and,  
7              feedback means for providing an indication of a  
8              difference between the first and second input distances.

1        12. The system of claim 11, wherein said feedback  
2              means provides a force feedback.

1        13. The system of claim 11, wherein said feedback  
2              means includes a visual feedback.

1        14. The system of claim 12, wherein said force  
2              feedback is applied to said first input means.

1        15. The system of claim 14, wherein said force  
2              feedback is applied to said second input means.

1       16. The system of claim 11, wherein said first input  
2 means includes a handle and said second input means  
3 includes a handle.

1       17. The system of claim 11, further comprising a  
2 communication means for remotely coupling said first and  
3 second input devices to said first medical device.

1       18. The system of claim 17, wherein said first medical  
device includes a robotic arm coupled to a medical  
instrument.

1       19. The system of claim 11, wherein said first input  
means includes a switch that allows said first input means  
to assume sole control of said first medical device.

*SAC*  
*A3*  
*A4*  
1       20. The system of claim 11, further comprising  
arbitrator means for arbitrating control of said first  
medical device between said first input means and said  
second input means.

1       21. A method for controlling a first medical device,  
2 comprising:

*Sch*  
*A*

3 moving a first input device a first input distance to  
4 move a first medical device;  
5 moving a second input device a second input distance to  
6 move the first medical instrument; and,  
7 generating an indication of a difference between the  
8 first and second input distances.

*Sch*  
*O*

1 22. The method of claim 21, wherein a force is  
2 feedback to the second input device.

3 23. The method of claim 22, further comprising  
4 transmitting force feedback data from the first medical  
5 device to the second input device through a communication  
6 port.

7 24. A medical robotic system, comprising:  
8  
1 a first medical device;  
2  
3 a controller coupled to said first medical device;  
4  
5 a first pair of handles coupled to said controller to  
6 control said first medical device; and,  
7  
8 a second pair of handles coupled to said controller to  
control said first medical device simultaneously with said  
first pair of handles.

1       25. The system of claim 24, wherein said second pair  
2 of handles receives a force feedback as a function of  
3 movement of said first pair of handles.

1       26. The system of claim 25, wherein said force  
2 feedback is variable.

1       27. The system of claim 24, wherein said first pair of  
2 handles include a switch that allows said first pair of  
3 handles to assume sole control of at least one medical  
4 device.

1       28. The system of claim 24, further comprising a  
2 network port to allow data to be transferred from said  
3 first pair of handles to said first medical device.

1       29. A medical robotic system, comprising:  
2           a first medical device;  
3           a controller coupled to said first medical device;  
4           first handle means for controlling said first medical  
5 device; and,

6 second handle means for controlling said first medical  
7 device simultaneously with said first pair of handles.

1 30. The system of claim 29, wherein said second handle  
2 means receives a force feedback as a function of movement  
3 of said first handle means.

1 31. The system of claim 30, wherein said force  
2 feedback is variable.

32. The system of claim 29, wherein said first handle  
means include a switch that allows said first handle means  
to assume sole control of at least one medical device.

33. The system of claim 29, further comprising a  
network port to allow data to be transferred from said  
first handle means to said first, second and third medical  
devices.

1 34. A method for controlling a plurality of medical  
2 devices, comprising:

3 moving a first handle;

4       moving a first medical device in response to movement  
5   of said first handle; and,  
6       moving a second handle simultaneously with said first  
7   handle to move said first medical device.

1       35. The method of claim 34, wherein the first handle  
2   assumes sole control of the first medical device.